REPLAY MECHANISM FOR SOFT ERROR

Abstract of the Disclosure

A processor is provided that implements a replay mechanism to recover from soft errors. The processor includes a protected execution unit, a check unit to detect errors in results generated by the protected execution unit, and a replay unit to track selected instructions issued to the protected execution unit. When the check unit detects an error, it triggers the replay unit to reissue the selected instructions to the protected execution unit. One embodiment of the replay unit provides an instruction buffer that includes pointers to track issue and retirement status of in-flight instructions. When the check unit indicates an error, the replay unit resets a pointer to reissue the instruction for which the error was detected.